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CHRONIC WASTING DISEASE: PREVENTION, MANAGEMENT AND NEED FOR INCREASED MONITORING OF THE WILDLIFE TRADE.

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Introduction

On behalf of The Humane Society of the United States, the nation's largest animal protection organization with more than seven million members and constituents, I am pleased to offer testimony before the Subcommittees on Forests and Forest Health and Fisheries Conservation, Wildlife and Oceans. We appreciate the invitation to participate and we applaud the committee for conducting this hearing, and hope that you will take decisive yet careful action, in cooperation with the states, to combat the severe dangers posed to animals by Chronic Wasting Disease (CWD).

There is no dispute that all interested parties – the game farm industry, hunting groups, wildlife managers, livestock interests, and animal advocates - support the rapid development of a live animal test, as a means of more precisely gauging the scope of the problem and addressing the disease in individual animals. Before that test is developed, however, there will continue to be great pressure to engage in mass slaughter of animals in areas where the disease has been identified. We urge the committee to resist the temptation to support this draconian response. While mass slaughter may appear to demonstrate a swift and decisive political response to an obviously grave circumstance, it is not at all clear that mass slaughter would result in successful eradication of the disease. On the other hand, we do know that mass slaughter would cause enormous harm and suffering to thousands of perfectly healthy animals. It may even slow down the natural process of selection, whereby a population becomes resistant to CWD over time as individuals who are susceptible to CWD die, and those genetically resistant survive to successfully reproduce. In a broader sense, we urge this committee to focus considerable attention on one of the root causes of this problem: the game farm industry and its role in fostering the spread of this very dangerous disease. More specifically, we urge the committee to develop and advance legislation to ban the interstate and international shipment of deer or elk for use in the game farm industry. This action is not only well-justified in light of the current crisis, but also is well within the federal government's area of authority and responsibility. The HSUS also strongly urges the Committee to support efforts to urge that the control and monitoring of wildlife, farmed or free-ranging, and diseases such as CWD, be assumed under the jurisdiction of wildlife agency experts rather than state agriculture agencies.

Background on Chronic Wasting Disease

Chronic wasting disease is a transmissible spongiform encephalopathy (TSE) of cervids. Natural infections have occurred in mule deer, white-tailed deer, and Rocky Mountain elk; the disease has been present in mule deer populations for at least 30 years (Williams and Young 1980). Other subspecies of elk are probably also susceptible to CWD (Williams, 2002) as well as other native and exotic cervid species (e.g. moose, caribou, key deer, sika deer, and fallow deer; Raymond, et al., 2000).

The TSEs are grouped together because of similarity in symptoms, pathology, and presumed ancestral agent; the infectious agents are hypothesized to be prions (infectious proteins without associated nucleic acids; Williams, 2002). Scrapie of domestic sheep and goats, bovine spongiform encephalopathy

(BSE) of cattle, and transmissible mink encephalopathy of farmed mink (*Mustela vison*) are TSEs of domestic animals. Scrapie, a TSE of domestic sheep, has been recognized in the United States since 1947, and it is possible that CWD derived from scrapie (Williams, 2002).

The overall duration of CWD infection (time from exposure to end-stage clinical disease) has been difficult to determine in natural cases but has been experimentally estimated to range between 12 and 34 months (Williams, 2002). The maximum disease course is not known, but can exceed 25 months in experimentally-infected deer and 34 months in elk.

Spread of CWD

The unusual biological features of CWD pose significant challenges for wildlife managers attempting to control or eradicate the disease. Because TSE agents are extremely resistant in the environment, transmission may be both direct (from animal to animal) and indirect (for example, from contaminated soil; Williams, 2002). Concentrating unnaturally large numbers of deer or elk in captivity or by supplemental feeding of wild cervids increases the likelihood of direct and indirect transmission of CWD between individuals as is the case for many other diseases. Contaminated pastures are thought to have served as sources of infection in some CWD epidemics (Miller et al. 1998; Williams, 2002); similar phenomena have been suspected in some outbreaks of sheep scrapie. The apparent persistence of the CWD agent in contaminated environments represents a significant obstacle to eradication of CWD from either farmed or free-ranging cervid populations (Williams, 2002; Geist, 1995).

The incidence of CWD can be remarkably high in captive cervid populations. In one infected research facility, more than 90% of mule deer resident for >2 years died or were euthanized due to illness from CWD (Williams, 2002). Recently, a high CWD prevalence (about 50%) has been demonstrated in white-tailed deer confined at an infected Nebraska elk farm. Among captive elk, CWD was the primary cause of adult mortality (five of seven, 71%; four of 23, 17%) in two research herds and a high prevalence (59%) was detected in a group of 17 elk slaughtered from an infected game farm herd (Peters, et al. 2000).

The potential for density-dependent disease transmission is greater among animals in captivity than in free-ranging wildlife. Captive animals are often held at higher than natural densities and thus are more frequently in direct contact and are more consistently stressed. Their repeated exposure to the same (potentially contaminated) soil may exacerbate effects of density on captive cervids.

CWD may be transmitted between captive and wild cervid populations, in either direction (Coon, et al., 2002), and there is concern that transmission between cervids and cattle is possible, but this has only been demonstrated experimentally. (To date, cattle have rarely become infected when experimentally inoculated with CWD via intracerebral injection; Hamir et al. 2001.)

Detection

Current quarantine methods for detecting CWD in captive wild species are unreliable and regulations for disease testing have failed to prevent the transportation of diseased animals, even though animals were certified as disease-free. For example, many states require only a 30-day quarantine period before allowing animals to enter the state. The quarantine period is not sufficient in identifying animals infected with CWD due to the long incubation periods of the disease (a minimum of 12-34 months). A live-animal test using tonsil tissue has been developed and found to be effective for use in mule deer and may also prove to be effective in white-tailed deer (Williams, 2002).

Control

No treatment is available for animals affected with CWD. Once clinical signs develop, CWD is invariably fatal. Similarly, no vaccine is available to prevent CWD infection. In addition, long incubation periods, subtle early clinical signs, absence of reliable live-animal diagnostic tests, an extremely persistent

infectious-like agent, possible environmental contamination, and an incomplete understanding of modes of transmission all constrain options for controlling or eradicating CWD.

In captive facilities, current management options are limited to quarantine or killing of CWD-affected herds. In the 1990's, two attempts to eradicate CWD from cervid research facilities failed; the causes of these failures were not determined, but environmental contamination remaining after the herd was killed was likely in both cases (Williams, 2002). Whether or not contaminated environments can ever be completely disinfected remains questionable.

Managing CWD in free-ranging animals presents enormous challenges as well. Management programs established to date focus on containing CWD and reducing its prevalence in localized areas. Translocating cervids and maintaining feeding stations have been banned in some states in an attempt to limit range expansion and decrease transmission. The slaughter of cervid populations in an area of high CWD prevalence has been attempted in Colorado as a management experiment, but the effectiveness of this approach remains to be determined. It may seem logical that lowered animal densities should reduce both disease transmission and likelihood of emigration of affected animals to adjacent areas with no previous incidence of CWD. However, historic migration patterns and social behaviors characteristic of some deer and elk populations (e.g. dispersal of yearling bucks and seasonal movements) may diminish the effectiveness of wholesale density reduction in controlling CWD (Williams, 2002). In addition, eliminating most or all of the deer in a given area may result in immigration of deer from adjacent habitat into an area with potentially contaminated soil.

The mass slaughter approach has a number of critics. Population ecologist Dr. Charles Southwick, of the University of Colorado, believes that CWD may have been around for generations, killing only those living in captivity or in other stressful conditions, such as drought or overcrowding. He advises capturing deer and taking biopsies of tonsil tissue, where evidence of infection may appear before symptoms develop, at least in mule deer. If this live-animal test were found to be effective for other cervid species, it would have the advantage of providing a means to avoid destroying healthy animals (Southwick, personal communication).

Southwick states that he favors killing animals that display symptoms of CWD, but he warns that the proposed hunt is likely to spread the disease by forcing infected deer into other areas and by creating a depopulated area, with an infective environment, into which healthy animals will move. Mr. Chairman, I would like to call your attention to the testimony of Dr. Charles Southwick that was submitted along with my testimony. In addition to submitting my own testimony, I am submitting Dr. Southwick's, and I hope the Committee will pay careful attention to his recommendations.

Managers from the USDA recently declared the current approach of "slaughter and test" to be ineffective and worthy of replacement with better diagnostic testing (Diez, 2002). It is critical that any management plan put into action by state wildlife departments actually accomplish the management goal. Killing 14,000 - 15,000 deer (as is suggested in Wisconsin), after finding only a handful of deer affected out of the 500 tested, is a drastic measure for which there is little convincing justification. A sound scientific rationale for this action is lacking.

Prevention

The HSUS strongly encourages this committee to focus on preventing the spread of CWD in the first place. Scientists have identified a number of "endemic foci" in Wyoming, Colorado and Nebraska. While these are considered the core endemic areas for CWD (Williams, 2002), it has also been found in captive cervids in Colorado, Kansas, Montana, Nebraska, Oklahoma, Saskatchewan, and South Dakota. It is documented that spillover of CWD into local free-ranging cervid populations has probably occurred in at least two locations (Williams, 2002). By transporting cervids from an endemic area, one is likely to establish more endemic foci, thereby facilitating the spread of the disease into new areas (Coon et al., 2002;

Williams, 2002). Moratoria on the import of some or all cervids have been enacted by Colorado, Connecticut, Indiana, Nebraska, New York, Texas, Virginia and Wisconsin; and eight states have limited importation by banning canned hunts—one of the primary reasons for translocation of cervids—completely. We submit that the interstate transport of cervids and other exotic animals kept at game farm facilities should be prohibited nation-wide, at least until effective control measures, such as reliable ante-mortem diagnostic tests and effective vaccination programs, can be developed. In our view, USDA's Proposed National Program for Captive Elk is wholly inadequate. USDA appears to be operating with the inflexible assumption that the business of deer and elk ranching must continue and, given that assumption, the department describes a herd certification program that is doomed to fail in containing the spread of CWD. We suggest that USDA start over in developing a CWD control program, and that the department seek input from a variety of experts, including disinterested scientists. The current industry document reads like a playbook from the game farming industry, which obviously had inordinate influence in this document.

The HSUS also urges better monitoring of the international and interstate trade in wildlife. Ranched cervids include both native and exotic species and scientists believe it is very likely that many species of the cervid family are susceptible to CWD (Williams, 2002). Unfortunately, the oversight of exotic mammals falls outside of the traditional regulatory jurisdiction of state agriculture departments and state fish and game agencies. In short, these animals often fall into regulatory limbo at the state level. It is important to monitor the transport of all species and subspecies of animals that are potential hosts of the disease—whether they are native or exotic.

I want to take a moment to note that the House and Senate have pending legislation – H.R. 3464 by Rep. Sam Farr and S. 1655 by Senator Joe Biden - to ban the transport of captive exotics for the purpose of being shot in a canned hunting setting – an ethically repugnant and unsportsmanlike means of killing animals in guaranteed, "no kill, no pay" hunts. Concerns about the humane treatment of animals and the ethic of fair chase provide ample rationale for enacting this long overdue legislation. The disease threats posed by CWD makes the case even more compelling and urgent.

Economics and Ethics

Game ranching has grown dramatically during the last decade, principally as an alternative animal husbandry industry. Several states, such as Michigan, Minnesota, Pennsylvania, and Wisconsin, have hundreds of game farms, where revenue is generated through the sale of animal parts, such as velvet or meat, and, in many states, through canned hunting arrangements.

Scientists, such as Dr. Valerius Geist of the University of Calgary, have warned for years about the threats posed to wildlife by game farms (e.g., Geist, 1995). Dr. Geist has decried that game farms represent unbridled commercialization of wildlife, which runs against the norms that have dominated wildlife policy in the United States developed in the early part of the 20th century; that these operations pose disease threats posed to wildlife and the livestock industry; and that they contribute to the abuse of animals (Geist, 2002). The HSUS warned about the excesses of this industry for the past two decades, and these concerns have proved prophetic. This industry does far more harm than good in our society. Neither this Congress nor the states should subsidize its operations, nor should it support of its perpetuation or expansion.

Taxpayers are footing the bill for crisis management of a problem to which the game farm industry has meaningfully and tangibly contributed. The federal government has also spent millions of taxpayer dollars to buy out and bail out these private owners. Their business is a risky one, and everybody who invested in it knew the risks. The federal government and the states have no obligation to rescue them now that they have helped spread a major wildlife disease throughout the country.

The people of Montana – mainly hunters – witnessed the state fail to address this emerging problem, and took the matter into their own hands by qualifying and passing a statewide ballot initiative in November 2000 to ban canned hunts and to halt the establishment of any new game farming operations. A number of

other states, such as Wyoming, have courageously and persistently resisted the efforts of the industry to gain a foothold. The federal government should take this cue from the people and from foresighted policy makers. It is time to put an end to the interstate movement of animals for use in this industry.

The industry claims it generates millions in economic activity. That may be true, but its operations have spawned disease threats that have cost millions to address. The costs will climb far higher, as we just begin to come to grips with the scope of the problem. Further, the spread of CWD threatens industries that generate revenues that dwarf the monies produced by game ranches, notably the wildlife watching and hunting industries. A columnist with the Denver Post noted, "Colorado's 160 domestic elk and deer ranches are, at most, a $44 million a year industry. So to coddle a $44 million specialty business, legislators potentially jeopardized two economic engines worth more than $5 billion to Colorado. What business book did these guys read?"

The Congress will have support for strong action to combat game farms from an unusual coalition of animal advocates and rank-in-file hunters. Most responsible hunters deplore these canned hunts, which one outdoor writer from Colorado recently labeled a "fish-in-a-barrel practice by which pseudo-hunters pay tens of thousands of dollars to execute a 'trophy' animal for the mantle." Animal advocates, conservationists, and hunters are now mounting a major effort in Oregon to outlaw game farms, and I am quite certain that similar interests will coalesce in other states.

Authority

A national trend is emerging whereby authority to manage or license captive hunting operations is being wrested from state wildlife agencies and turned over to state departments of agriculture (for a good example of this in Vermont, see Buck, In press). The stated rationale has been that cervids represent alternative livestock opportunities for farmers and therefore should be managed by departments of agriculture. Advocates of the industry are driving this transfer of authority because they recognize that state wildlife agencies are carefully examining the disease transmission issues so central to this public policy discussion. (Coons et al., 2002). Agriculture departments are less sensitive to wildlife disease and humane issues than wildlife departments. Thus far, 21 states have handed over management of captive cervids to their agriculture departments. It is a "confusing state of management affairs" given that one can find ten different game farm management approaches by surveying ten different states (Buck, 2002). This does not make sense biologically, economically, or logistically. CWD and wild cervid populations do not recognize state boundaries and, as long as some states continue to allow the importation of cervids, their neighboring states remain at risk. That fact buttresses the case for federal action in halting interstate transport of cervids.

Conclusion

The Humane Society of the United States urges this Committee to take action to prevent further spread of CWD. When risks are identified, they should be avoided. With this in mind, we urge a nation-wide moratorium on inter-state translocations of cervids, at least until more is known about CWD and effective means of its control.

We believe that it is unreasonable to advance a massive kill of wild cervid populations in the absence of compelling scientific justification for the effectiveness of this type of action. In addition to the questionable efficacy, we are concerned that the majority of does killed at this time of the year will be nursing fawns that are hidden away some distance from the doe. When nursing mothers are killed, these fawns will die from starvation, and their carcasses will rot. If the fawns are also infected, this will be an additional major contamination factor in the environment, as well as causing enormous suffering for the fawns.

We also suggest severe restrictions on supplemental feeding and baiting of cervids as part of an overall effort to reduce direct transmission of CWD within wild populations. Finally, we ask that the

Committee ensure that the management of free-ranging and captive cervids return to the jurisdiction of state wildlife agencies, whose personnel have the knowledge and expertise to address the movements and diseases of wildlife.

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